

Unit 1 Review- Foundations of Algebra

Simplify:

1) $13 - 12 \div (2 + 2) \cdot 3 - 3$

1

2) $4\sqrt{25} \div (9 - 4) \cdot 2$

8

3) $48 \div 12 \cdot 2$

8

4) $\frac{1}{4}(21 + 3) \div 3 + 6$

8

Self-assessment rating:

1
Perfect

2

3
so-so

4

5
I need help on these!

Simplify:

5) $\frac{10(5-6)}{2} + 5$

0

6) $8 + 3(4 - 1)$

17

7) $10 - \{22 \div [2 + (3 \cdot 3)]\}$

8

8) $(3 - 8)^2 + (4 - 3 \cdot 2)$

23

Self-assessment rating:

1

2

3

4

5

Simplify:

9) $(4n^2 - 6n + 3) - (7n + 3 - 8n^2)$

$12n^2 - 13n$

10) $5x^3 + 2x + 4x^2 - x$

$5x^3 + 4x^2 + x$

11) $4(c + 2b) - 3(2c + b)$

$-2c + 5b$

12) $x^5 + x^3 + x^2$

Done

13) $(-9v^2 - 8u) + (2uv - 2u^2 + v^2) + (-v^2 + 4uv) - 2u^2$

$2x + 3y$

14) $\frac{1}{4}(12x - 4y) - \frac{1}{3}(3x - 12y)$

Self-assessment rating:

1

2

3

4

5

Solve for x:

15) $3x + 7 = -5x$

$x = -\frac{7}{8}$

16) $2(x - 3) + x = 4x + 2$

$x = -8$

17) $5x + 6 = 36$

$x = 6$

18) $6x + 2 = 5x - 4$

$x = -6$

19) $\frac{2}{3}x + 5 = 7$

$x = 3$

~~$\frac{3}{2}x = \frac{2 \cdot 3}{2}$~~

Self-assessment rating:

1

2

3

4

5

Name _____ Date _____ Block _____

Solve for the specified variable:

20) Solve $V = \pi r^2 h$ for h . $\frac{V}{\pi r^2}$

21) Solve $D = \frac{m}{V}$ for V . $V = \frac{m}{D}$

22) Solve $a(b-c) = d$ for a . $a = \frac{d}{b-c}$

23) Solve $A = \frac{x+y}{3}$, for x

$x = 3A - y$

24) Solve $y = \frac{1}{4}x - 12$, for x

$x = 4(y + 12)$
 $= 4y + 48$

Self-assessment rating: 1 2 3 4 5

Solve:

25) $6(6v+6) - 5 = 1 + 6v$ $v = -1$

26) $-3(4r-8) = -36$

$r = 5$

27) $-4k + 2(5k-6) = -3k-3$

$k = 1$

28) $12(2k+11) = 12(2k+12)$

no solutions

Self-assessment rating: 1 2 3 4 5

Simplify:

29) $4\sqrt{40}$ $8\sqrt{10}$

30) $\sqrt{68}$ $2\sqrt{17}$

31) $\sqrt{\frac{9}{49}}$ $\frac{3}{7}$

32) $\sqrt{90a^2}$ $3a\sqrt{10}$

33) $\sqrt{121x^3y}$ $11x\sqrt{xy}$

34) $\sqrt[3]{32x^3y^5z}$ $2xy\sqrt[3]{4y^2z}$

Self-assessment rating: 1 2 3 4 5

Translate the following verbal expressions into symbols:

34) Twelve more than the product of a number and five

$12 + 5n$

35) Six times as much as the sum of two and a number

$6(x+2)$

36) Ten less than a number cubed

$n^3 - 10$

37) The product and a number and five

$5n$

38) Nine times the quantity six minus a number.

$9(6-n)$

Self-assessment rating: 1 2 3 4 5